

Atty Dkt. No.: 10010632-3
USSN: 10/611,409

AMENDMENTS

In the Claims:

Claims 1-20 (canceled)

21. (Currently Amended) A method of determining a nucleic acid sequence, said method comprising:

- (a) hybridizing a primer nucleic acid to a single stranded template nucleic acid;
- (b) extending said primer nucleic acid by at least one complementary nucleotide to produce an extension product that includes a 3' cleavable tag, wherein said at least one complementary nucleotide includes a 3' cleavable tag;
- (c) cleaving said 3' cleavable tag from said extension product to produce a cleaved tag, not bound to ~~[[a]] said at least one complementary~~ nucleotide, and an extension product that includes said at least one complementary nucleotide hybridized to said template nucleic acid sequence; and
- (d) detecting said cleaved tag away from said extension product to determine said nucleic acid sequence.

22. (Currently Amended) The method according to Claim 21, wherein said primer nucleic acid is extended by a single ~~cleavable tag terminated~~ deoxynucleotide triphosphate labeled with a cleavable tag (cdNTP) to produce said extension product.

23. (Previously Presented) The method according to Claim 22, wherein said extension product is produced by a polymerase in the presence of four distinguishable cdNTPs.

24. (Previously Presented) The method according to Claim 23, wherein said four distinguishable cdNTPs each include a distinguishable cleavable tag.

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25. (Previously Presented) The method according to Claim 21, wherein said primer nucleic acid is extended by an oligonucleotide of at least two nucleotides in length that includes a cleavable tag.

26. (Previously Presented) The method according to Claim 25, wherein said cleavable tag is a 3' cleavable tag.

27. (Previously Presented) The method according to Claim 25, wherein said extension product is produced by a ligase in the presence of said oligonucleotide.

28. (Previously Presented) The method according to Claim 21, wherein said cleavable tag is cleavable by chemical cleavage.

29. (Previously Presented) The method according to Claim 28, wherein said cleavable tag is an acid cleavable tag.

30. (Previously Presented) The method according to Claim 28, wherein said cleavable tag is a base cleavable tag.

31. (Previously Presented) The method according to Claim 21, wherein said cleavable tag is a photocleavable tag.

32. (Previously Presented) The method according to Claim 21, wherein said cleavable tag is a fluorescent tag.

33. (Previously Presented) The method according to Claim 21, wherein said cleavable tag is a mass tag.

34. (Previously Presented) The method according to Claim 21, wherein said steps (a) to (d) are repeated at least once.

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Claims 35-41 (cancelled)

42. **(Currently Amended)** A method of determining a nucleic acid sequence, said method comprising:

- (a) hybridizing a primer nucleic acid to a single stranded template nucleic acid;
- (b) extending said primer nucleic acid by at least one complementary nucleotide to produce a single extension product that includes a 3' cleavable tag, wherein said at least one complementary nucleotide includes a 3' cleavable tag;
- (c) cleaving said 3' cleavable tag from said single extension product to produce a cleaved tag not bound to [[a]] said at least one complementary nucleotide;
- (d) detecting said cleaved tag away from said extension product;
- (e) repeating steps (b) to (d) and thereby determining said nucleic acid sequence.

43. **(Currently Amended)** A method of determining a nucleic acid sequence, said method comprising:

- (a) hybridizing a primer nucleic acid to a single stranded template nucleic acid in a sample to produce a hybridization product composition;
- (b) extending said primer nucleic acid ~~of said hybridization product composition~~ by at least one complementary nucleotide to produce a extension product that includes a 3' cleavable tag, wherein said at least one complementary nucleotide includes a 3' cleavable tag;
- (c) cleaving said 3' cleavable tag from said extension product to produce a cleaved tag not bound to [[a]] said at least one complementary nucleotide; and
- (d) detecting said cleaved tag away from said extension product; wherein said extension product is not separated from said sample hybridization product composition.